

CLAIMS

What is claimed is:

1. A method for controlling the average weight of each
5 portion of a plurality of portions of material fed from a
feeding system that comprises at least a hopper and a weighing
device, said method comprising:

in a first weighing step, weighing said hopper;

after said first weighing step, dispensing a plurality of
10 portions of material, the plurality of portions being
constituted by a given number of portions;

in a second weighing step, after said dispensing step,
weighing said hopper;

calculating the difference between the weight of said
15 hopper determined in said first weighing step and the weight
of said hopper determined in said second weighing step, the
difference constituting the loss of weight of said hopper; and

dividing the loss of weight of said hopper by the said
given number of said plurality of portions.

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2. The method of claim 1, wherein the hopper comprises:
a lower part provided with an outlet having a
periphery;

an upper part provided with a fill opening, wherein
25 said upper part has a wall that is located to form an upper

boundary of a region enclosed by a vertical projection of said periphery and the entire said fill opening is located above, and is horizontally offset from, said upper boundary of said region.

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3. The method of claim 2, wherein the hopper comprises:

a lower part provided with an outlet;

an upper part provided with a fill opening and an

inclined wall or an upper boundary, wherein said inclined wall

10 has a portion or said upper boundary has a region that is

located above said outlet, and is delimited by a vertical

projection of said outlet, and the entire said fill opening is

located above said inclined wall portion, and is horizontally

offset from said inclined wall portion.

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4. The method of claim 3 further comprising:

controlling the delivery of material to said hopper to

maintain said hopper filled with material to the level at or

above said portion of said inclined wall, thereby causing said

20 hopper to remain filled with material to a level at or above

said inclined wall portion as material is being dispensed via

said outlet.

5. The method of claim 4, wherein said upper part of said hopper has parallel sidewalls or a cylindrical sidewall.

5 6. The method of claim 5, wherein said lower part of said hopper has a funnel-shaped part.

7. The method of claim 1, wherein:

said hopper has lower part provided with an outlet;

10 said method further comprises disposing said hopper into a container having an outlet that is horizontally offset from, and located below, said outlet of said hopper; and

said step of dispensing is carried out by feeding material from said hopper outlet to said container and then
15 from said container outlet to a feeder that dispenses the plurality of portions of material.

8. The method of claim 1, wherein said step of dispensing is carried out by operating a feeder to dispense
20 successive portions of material from said hopper, wherein each said portion is dispensed in a given time and for a given interval of time, and
controlling said feeder to dispense more or less material during subsequent intervals of time depending on whether the

calculated portion weight is more or less than a predetermined portion weight.

9. The method of claim 1, wherein said hopper has a
5 lower part provided with an outlet, and further
wherein said step of dispensing is carried out by operating a
screw feeder that feeds material by rotating at a controlled
speed to dispense successive portions of material from said
hopper.

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10. A method for controlling the average weight of each
of portion of a plurality of portions of material fed from a
feeding system that comprises at least a hopper and a weighing
device, said method comprising:

15 in a first weighing step, weighing said hopper;
after said first weighing step, dispensing a plurality of
portions of material, the plurality of portions being
constituted by a given number of portions;

in a second weighing step, after said dispensing step,
20 weighing said hopper;

calculating the difference between the weight of said
hopper determined in said first weighing step and the weight
of said hopper determined in said second weighing step, the
difference constituting the loss of weight of said hopper; and

dividing the loss of weight of said hopper by the said given number of said plurality of portions,

wherein said weighing steps are performed with a weighing device and the given number of portions is equal to at least
5 the number calculated by dividing the sensitivity of said weighing device by an estimated or desired weight of each fed portion, and wherein said estimated or desired weight of each fed portion is smaller than said sensitivity.

10 11. The method of claim 10, wherein the hopper comprises:

a lower part provided with an outlet having a periphery;

an upper part provided with a fill opening, wherein
15 said upper part has a wall that is located to form an upper boundary of a region enclosed by a vertical projection of said periphery and the entire said fill opening is located above, and is horizontally offset from, said upper boundary of said region.

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12. The method of claim 11, wherein the hopper comprises:

a lower part provided with an outlet;

an upper part provided with a fill opening and an
25 inclined wall or an upper boundary, wherein said inclined wall

has a portion or said upper boundary has a region that is located above said outlet, and is delimited by a vertical projection of said outlet, and the entire said fill opening is located above said inclined wall portion, and is horizontally
5 offset from said inclined wall portion.

13. The method of claim 12 further comprising:

controlling the delivery of material to said hopper to maintain said hopper filled with material to the level at or
10 above said portion of said inclined wall, thereby causing said hopper to remain filled with material to a level at or above said inclined wall portion as material is being dispensed via said outlet.

15 14. The method of claim 13, wherein said upper part of said hopper has parallel sidewalls or a cylindrical sidewall.

15. The method of claim 14, wherein said lower part of said hopper has a funnel-shaped part.

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16. The method of claim 10, wherein:

said hopper has lower part provided with an outlet;

said method further comprises disposing said hopper into a container having an outlet that is horizontally offset from, and located below, said outlet of said hopper; and

said step of dispensing is carried out by feeding
5 material from said hopper outlet to said container and then from said container outlet to a feeder that dispenses the plurality of portions of material.

17. The method of claim 10, wherein said step of
10 dispensing is carried out by operating a feeder to dispense successive portions of material from said hopper, wherein each said portion is dispensed in a given time and for a given interval of time, and
controlling said feeder to dispense more or less material
15 during subsequent intervals of time depending on whether the calculated portion weight is more or less than a predetermined portion weight.

18. The method of claim 10 wherein said hopper has a
20 lower part provided with an outlet, and further wherein said step of dispensing is carried out by operating a screw feeder that feeds material by rotating at a controlled speed to dispense successive portions of material from said hopper.